

## WHAT IS CLAIMED IS:

1. A method for automatically detecting an edge of a document in a scanning system, comprising the steps of:

- (a) scanning a portion of the document to obtain a set of image data;
- (b) calculating a set of first values from the image data using a first function, the first function being a first-order function;
- (c) calculating a set of second values from the image data using a second function, the second function being a second-order function;
- (d) determining a first slope value, the first slope value being a function of the difference between a plurality of the first values;
- (e) determining a second slope value, the second slope value being a function of the difference between a plurality of the second values;  
and
- (f) determining a detected edge of the document from the first slope value and the second slope value.

2. The method according to **claim 1**, wherein step (f) comprises:

- (f1) computing a product of the first slope value and the second slope value; and
- (f2) generating a block sum value, the block sum value comprising the sum of a plurality of second values.

3. The method according to **claim 1**, further comprising:

- (g) calculating a set of third values from the image data, each one of the third values being a fourth-order statistic;
- (h) determining a second detected edge of the document from the set of third values; and
- (i) reconciling the detected edge and the second detected edge to obtain the document edge.

4. The method according to **claim 3**, wherein step (h) comprises:  
(h1) determining a third slope value, the third slope value being a function of the difference between a plurality of the third values;  
wherein the second detected edge is identified from the third slope value.
5. The method according to **claim 1**, further comprising:  
(g) calculating a plurality of block values, each block value comprising a mean of a plurality of first values; and  
(h) verifying the detected edge using the plurality of neighbor block values.
6. The method according to **claim 5**, wherein step (g) comprises:  
(g1) calculating a first block value, the first block value comprising a mean of a first plurality of first values;  
(g2) calculating a second block value, the second block value comprising a mean of a second plurality of first values; and  
(g3) computing a first block difference value, the first block difference value comprising an arithmetic difference between the first block value and the second block value;  
wherein step (h) verifies the detected edge when the first block value is greater than a first block difference threshold.

7. A method for automatically detecting an edge of a document in a scanning system, comprising the steps of:

- (a) scanning a portion of the document to obtain a set of image data;
- (b) calculating a set of first values from the image data using a first function, the first function being a second-order function;
- (c) determining a first slope value, the first slope value being a function of the difference between a plurality of the first values;
- (d) generating a block sum value, the block sum value comprising the sum of a plurality of first values; and
- (f) determining a detected edge of the document from the first slope value and the block sum value.

8. The method according to **claim 2**, wherein step (f) comprises:

- (f1) computing a product of the first slope value and the second slope value; and
- (f2) generating a block sum value, the block sum value comprising the sum of a plurality of second values.

9. The method according to **claim 1**, further comprising:

- (g) calculating a set of second values from the image data using a second, the second function being a fourth-order function;
- (h) determining a second detected edge of the document from the set of second values; and
- (i) reconciling the detected edge and the second detected edge to obtain the document edge.

10. The method according to **claim 9**, wherein step (h) comprises:

- (h1) determining a second slope value, the second slope value being a function of the difference between a plurality of the second values; wherein the second detected edge is identified from the third slope value.